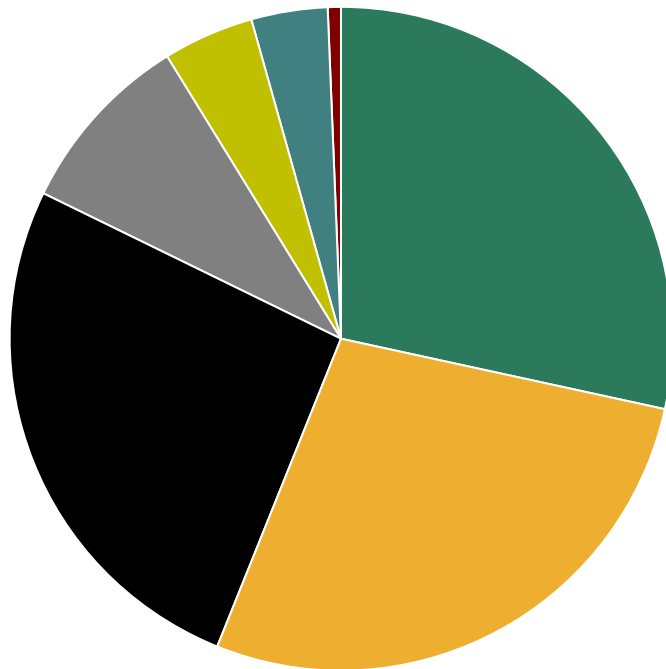
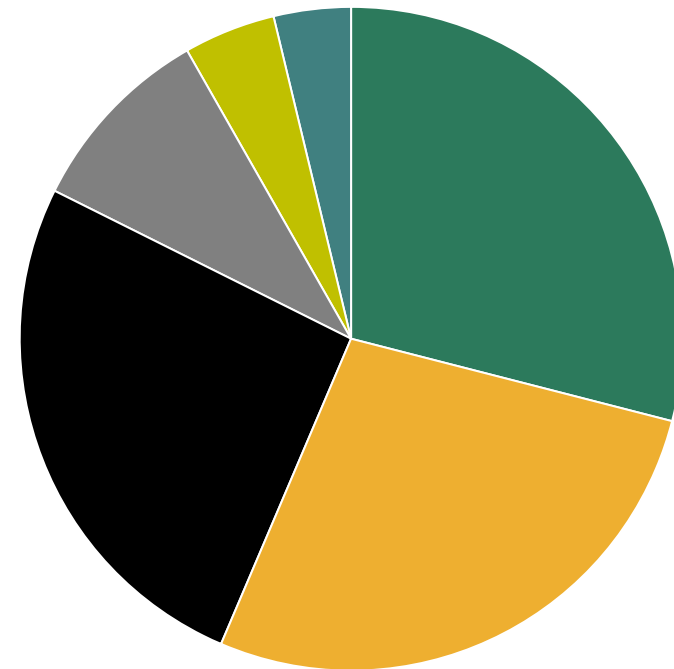


June 30, 2019 : \$2,337,277,267

September 30, 2019 : \$2,311,958,875

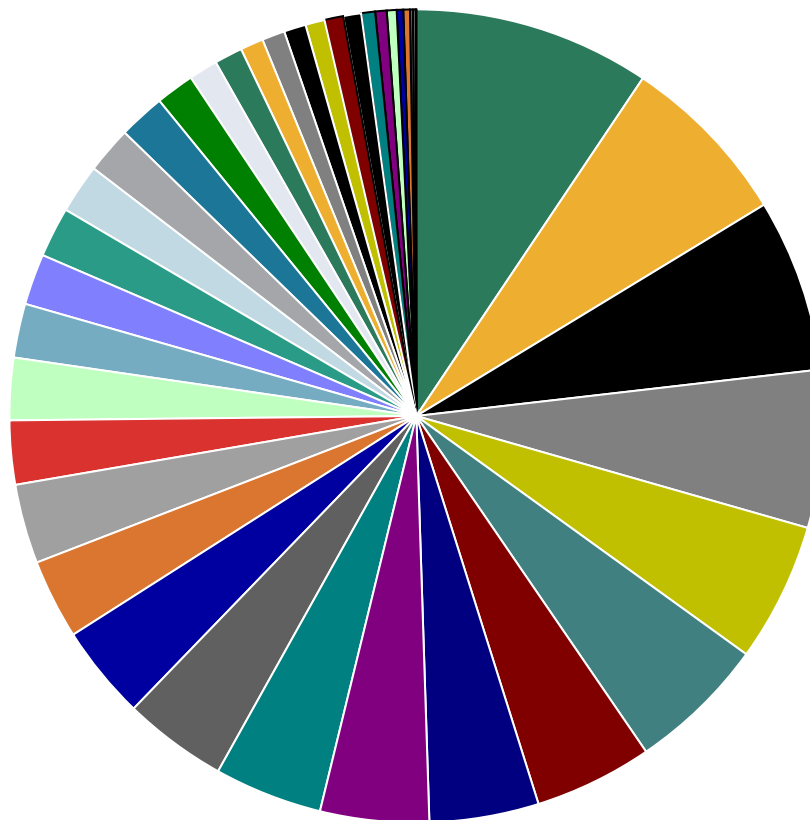


	Market Value (\$)	Allocation (%)
Fixed Income Composite	663,877,104	28.40
Domestic Equity Composite	647,264,316	27.69
International Equity Composite	610,716,417	26.13
Total Real Estate Composite	209,728,099	8.97
Hedge Fund Composite	103,652,335	4.43
Private Equity Composite	86,994,222	3.72
In House Cash	15,044,773	0.64



	Market Value (\$)	Allocation (%)
Fixed Income Composite	670,301,394	28.99
Domestic Equity Composite	634,062,268	27.43
International Equity Composite	599,754,623	25.94
Total Real Estate Composite	217,245,331	9.40
Hedge Fund Composite	103,501,559	4.48
Private Equity Composite	86,994,222	3.76
In House Cash	99,478	0.00

September 30, 2019 : \$2,311,958,875



	Market Value (\$)	Allocation (%)
Brandywine	217,179,945	9.39
Rhumblin S&P 500	159,762,620	6.91
Mackay Shields	158,724,807	6.87
Barrow, Hanley	144,854,278	6.27
1607 Capital Partners	127,655,369	5.52
Marathon Asset Mgmt	127,050,110	5.50
J.P. Morgan Global Emerging Markets Discovery Fund	108,600,850	4.70
Acadian EM Equity II	100,337,231	4.34
Prudential Core Conserv Bond	99,809,404	4.32
PIMCO	99,311,687	4.30
Smith Graham	95,275,551	4.12
Principal Global Investors	86,592,587	3.75
Winslow Capital Management	73,208,331	3.17
BlackRock US Core Property Fund	72,997,566	3.16
Rhumblin Russell 1000 Growth	58,721,403	2.54
NTGI S&P 400	57,163,938	2.47
Strategic Global Advisors	49,518,475	2.14
Aetos	46,842,986	2.03
Grosvenor Institutional Partners, L.P.	46,140,648	2.00
Conestoga Capital Advisors	45,161,509	1.95
Capital Prospects SMID	42,888,852	1.86
NB Crossroads Fund XXI	42,584,280	1.84
Pantheon Global Secondary Fund V	35,399,968	1.53
Nicholas Investment Partners	26,455,317	1.14
Capital Prospects Small Cap Value	25,846,020	1.12
Gerding Edlen Green Cities III, L.P.	21,208,482	0.92
TA Realty Core Property Fund	20,932,153	0.91
TA Realty Fund XI	20,232,032	0.88
Long Wharf RE Partners V, L.P.	17,626,573	0.76
Vanguard REIT Index Inv	17,236,156	0.75
RREEF REIT II	16,478,065	0.71
Mesirow Real Estate Value Fund III, L.P.	12,752,840	0.55
Preserver, L.P.	10,517,925	0.45
SSM Partners Growth Equity II L.P.	9,009,974	0.39
Cornerstone (Barings) Real Estate Advisers Fund X	6,026,477	0.26
Long Wharf Real Estate Partners IV, L.P.	6,023,528	0.26
Dune Real Estate Fund IV	2,625,657	0.11
Long Wharf RE Partners VI, L.P.	2,615,004	0.11
Gerding Edlen Green Cities IV, L.P.	486,584	0.02
In House Cash	99,478	0.00
Cornerstone (Barings) Real Estate Advisers VIII	4,214	0.00

# City of Memphis

## Asset Allocation Comparison

Portfolio Value 9/30/19

\$2,311,958,875

<u>Target Allocations</u>			<u>Current Managers &amp; Allocations</u>			<u>Difference</u>	<u>Range</u>
<u>Equity</u>		(000)			(000)		
Large Cap Equity	17.00%	\$393,033	Barrow, Hanley (large cap value)	6.27%	\$144,854	1.88%	13%-21%
			Rhumblin Russell 1000 Growth (large cap growth)	2.54%	\$58,721		
			Winslow (large cap growth)	3.17%	\$73,208		
			Rhumblin S&P 500 (large cap core)	6.91%	\$159,763		
Mid/SMID Cap Equity	5.00%	\$115,598	Northern Trust (mid cap core)	2.47%	\$57,164	-0.67%	0%-7%
			Capital Prospects SMID Cap*	1.86%	\$42,889		
Small Cap Equity	5.00%	\$115,598	Capital Prospects Small Cap Value*	1.12%	\$25,846	-0.78%	0%-7%
			Conestoga (small cap growth)	1.95%	\$45,162		
			Nicholas (small cap growth)	1.14%	\$26,455		
<b>Domestic Equity</b>	<b>27.00%</b>	<b>\$624,229</b>	<b>Domestic Equity</b>	<b>27.43%</b>	<b>\$634,062</b>	<b>0.43%</b>	<b>17%-37%</b>
Developed International	18.50%	\$427,712	1607 Capital Partners	5.52%	\$127,655	-1.60%	14%-23%
			Principal Global Investors	3.75%	\$86,593		
			Marathon Asset Mgmt	5.50%	\$127,050		
			Strategic Global Advisors	2.14%	\$49,518		
Emerging Markets	8.50%	\$196,517	Acadian	4.34%	\$100,337	0.54%	5%-12%
			JPMorgan	4.70%	\$108,601		
<b>International</b>	<b>27.00%</b>	<b>\$624,229</b>	<b>International</b>	<b>25.94%</b>	<b>\$599,755</b>	<b>-1.06%</b>	<b>17%-37%</b>
<b>Equity Total</b>	<b>54.00%</b>	<b>\$1,248,458</b>	<b>Equity Total</b>	<b>53.37%</b>	<b>\$1,233,817</b>	<b>-0.63%</b>	
<u>Fixed Income</u>							
Core Fixed Income	12.00%	\$277,435	PIMCO	4.30%	\$99,312	0.73%	7%-17%
			Prudential Core Conserv Bond	4.32%	\$99,809		
			Smith Graham	4.12%	\$95,276		
Global Fixed Income	10.00%	\$231,196	Brandywine	9.39%	\$217,180	-0.61%	3%-13%
Global High Yield	6.00%	\$138,718	Mackay Shields	6.87%	\$158,725	0.87%	3%-13%
<b>Fixed Income Total</b>	<b>28.00%</b>	<b>\$647,348</b>	<b>Fixed Income Total</b>	<b>28.99%</b>	<b>\$670,301</b>	<b>0.99%</b>	<b>20%-36%</b>

\* Emerging Managers

**Real Estate**

Core/Value Add/REITs	10.00%	\$231,196	BlackRock US Core Property Fund	3.16%	\$72,998		
			RREEF REIT II	0.71%	\$16,478		
			Vanguard REIT Index	0.75%	\$17,236		
			TA Realty Core Property Fund	0.91%	\$20,932		
			Long Wharf Real Estate Partners IV	0.26%	\$6,024	(Total Commitment \$20M, Total Drawn \$21.5M, Total Distributed \$25.1M)	
			Long Wharf Real Estate Partners Fund V	0.76%	\$17,627	(Total Commitment \$20M, Total Drawn \$20.0M, Total Distributed \$6.5M)	
			Long Wharf Real Estate Partners Fund VI	0.11%	\$2,615	(Total Commitment \$20M, Total Drawn \$2.8M, Total Distributed \$0.0M)	
			Cornerstone (Barings) Real Estate Fund VIII <sup>1</sup>	0.00%	\$4	(Total Commitment \$10M, Total Drawn \$11.7M, Total Distributed \$15.6M)	
			Cornerstone (Barings) Real Estate Fund X <sup>1</sup>	0.26%	\$6,026	(Total Commitment \$10M, Total Drawn \$7.9M, Total Distributed \$3.8M)	
			Gerding Edlen Green Cities III	0.92%	\$21,208	(Total Commitment \$20M, Total Drawn \$23.4M, Total Distributed \$6.6M)	
			Gerding Edlen Green Cities IV	0.02%	\$487	(Total Commitment \$20M, Total Drawn \$0.6M, Total Distributed \$0.0M)	
			TA Realty Fund XI	0.88%	\$20,232	(Total Commitment \$20M, Total Drawn \$20.0M, Total Distributed \$3.7M)	
			Mesirow Financial Real Estate Value Fund III	0.55%	\$12,753	(Total Commitment \$20M, Total Drawn \$13.8M, Total Distributed \$1.2M)	
			Dune Real Estate Partners Fund IV	0.11%	\$2,626	(Total Commitment \$30M, Total Drawn \$2.6M, Total Distributed \$0.0M)	

**Real Estate Total****10.00%****\$231,196****Real Estate Total****9.40%****\$217,245****-0.60%****5%-10%****Private Equity**

Secondary	2.00%		Pantheon Global Secondary Fund V	1.53%	\$35,400	(Total Commitment \$50M, Total Drawn \$33.7M, Total Distributed \$10.4M)	
Direct Private Equity			SSM Growth Equity Fund II*	0.39%	\$9,010	(Total Commitment \$10M, Total Drawn \$7.4, Total Distributed \$0.0M)	
Diversified FoF	2.00%		Neuberger Berman Crossroads XXI	1.84%	\$42,584	(Total Commitment \$50M, Total Drawn \$33.5M, Total Distributed \$0.0M)	
			SSM Growth Equity Fund III (\$10M Commitment)				

**Private Equity Total****4.00%****\$92,478****3.76%****\$86,994****-0.24%****2%-6%****Hedge Fund of Funds**

4.00%

Aetos	2.03%	\$46,843
Grosvenor	2.00%	\$46,141
Preserver, LP*	0.45%	\$10,518

**Hedge Fund of Funds Total****4.00%****\$92,478****4.48%****\$103,502****0.48%****2%-6%**

Internal Account

0.00%

\$0

Internal Account

0.00%

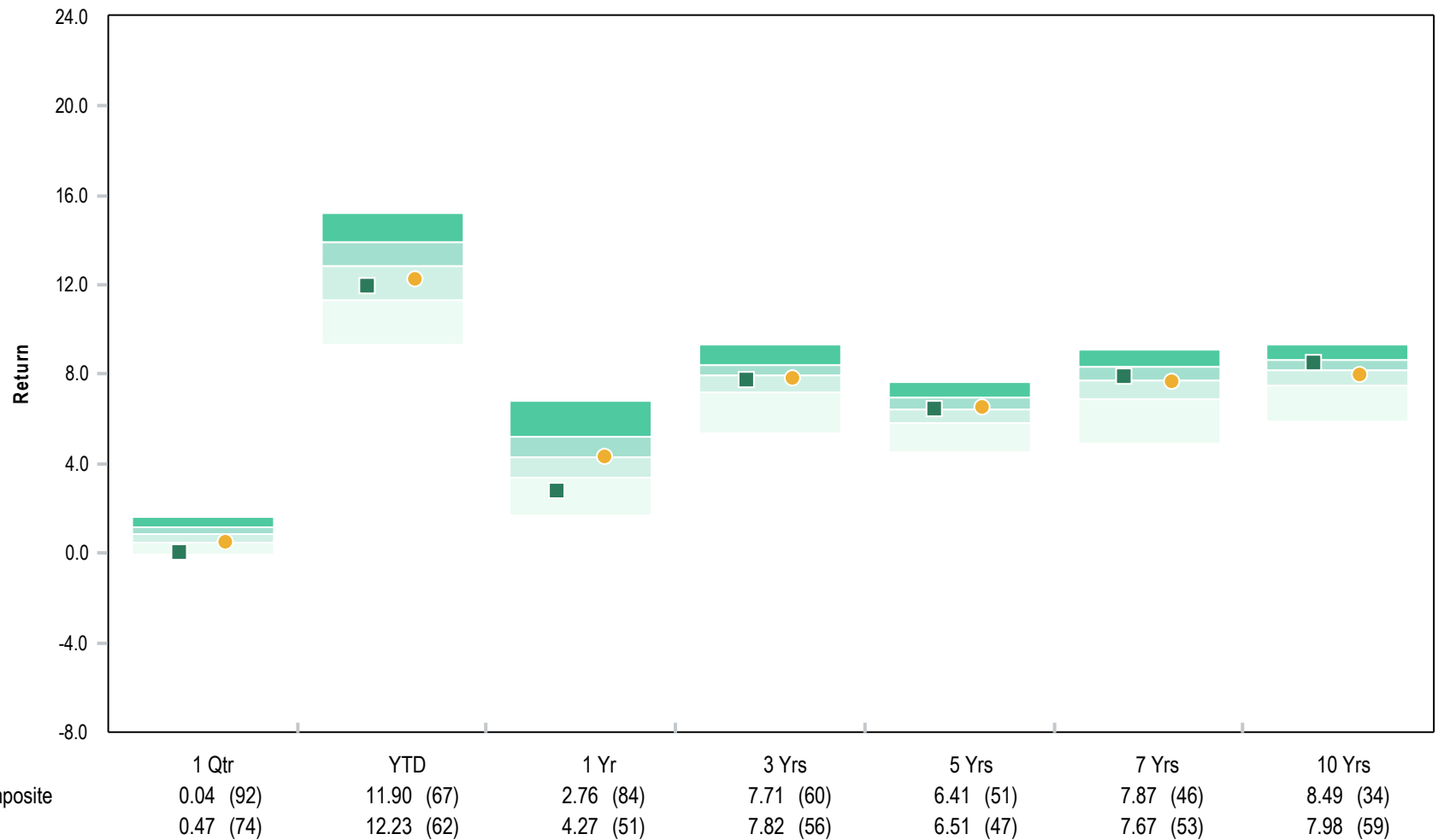
\$99

**Cash****0.00%****\$0****Cash****0.00%****\$99****0.00%****0%-5%****Total****100%****\$2,311,959****Total****100%****\$2,311,959**

<sup>1</sup> Cornerstone Real Estate Advisers now operates under the investment adviser name "Barings Real Estate Advisers," however; all predecessor funds retain the name Cornerstone. All new products open to new investors will operate under the name "Barings Real Estate Advisers" moving forward.

	Performance (%)								Inception Date
	1 Quarter	Year To Date	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	
Total Fund Composite	0.04	11.90	2.76	7.71	6.41	7.87	8.49	9.41	10/01/1982
<i>Policy Index</i>	0.47	12.23	4.27	7.82	6.51	7.67	7.98	9.86	
In House Cash	0.54	1.73	2.31	1.46	0.99	0.73	0.62	4.13	10/01/1982
<i>90 Day U.S. Treasury Bill</i>	0.56	1.81	2.38	1.54	0.96	0.70	0.52	3.87	
Domestic Equity Composite	0.30	19.73	0.41	12.67	9.34	12.12	12.62	11.81	10/01/1982
<i>Russell 3000 Index</i>	1.16	20.09	2.92	12.83	10.44	13.00	13.08	11.62	
Fixed Income Composite	0.97	7.82	7.03	3.52	3.89	3.45	4.87	7.48	10/01/1982
<i>Fixed Income Index</i>	1.45	8.28	8.41	3.10	3.53	3.27	4.18	7.41	
International Equity Composite	-1.76	12.75	-0.27	7.51	5.04	7.48	6.71	5.15	01/01/1990
<i>International Equity Index</i>	-2.06	10.64	-1.50	6.38	3.14	5.37	4.84	4.99	
Hedge Fund Composite	-0.15	4.87	0.07	3.81	N/A	N/A	N/A	4.61	04/01/2016
<i>90-Day T-Bill+ 5%</i>	1.80	5.60	7.50	6.61	6.01	5.74	5.55	6.42	
<i>HFN HFOF Multi Strategy</i>	-0.27	4.77	-0.23	3.02	1.53	2.88	2.36	3.32	
Core Private Real Estate Composite	2.20	8.29	8.08	7.16	9.75	10.14	11.74	8.39	09/01/1999
<i>NCREIF Property Index</i>	1.41	4.80	6.24	6.76	8.57	9.29	9.77	8.84	

	Performance (%)									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Total Fund Composite	-5.39	18.36	6.76	0.24	5.49	17.71	13.75	0.72	14.05	22.23
Policy Index	-4.45	16.72	8.00	-0.19	5.86	15.19	12.79	0.77	12.11	19.76
In House Cash	1.93	0.67	0.35	0.18	0.11	0.11	0.20	0.54	0.36	0.34
90 Day U.S. Treasury Bill	1.87	0.86	0.25	0.03	0.04	0.05	0.08	0.08	0.13	0.17
Domestic Equity Composite	-5.88	22.62	10.04	-1.26	8.80	35.55	16.30	0.65	18.23	28.67
Russell 3000 Index	-5.24	21.13	12.74	0.48	12.56	33.55	16.42	1.03	16.93	28.34
Fixed Income Composite	-0.98	6.94	5.14	-0.23	4.70	0.13	8.15	6.69	8.81	18.96
Fixed Income Index	-0.89	5.65	4.83	-0.86	4.89	0.39	6.87	6.39	6.54	5.93
International Equity Composite	-15.52	33.29	3.30	-0.50	-1.08	20.79	20.28	-12.77	13.91	36.19
International Equity Index	-13.99	28.77	3.16	-4.06	-4.13	16.58	17.70	-13.18	11.60	42.14
Hedge Fund Composite	-1.55	6.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90-Day T-Bill+ 5%	6.97	5.90	5.27	5.03	5.04	5.05	5.08	5.09	5.14	5.17
HFN HFOF Multi Strategy	-3.58	7.26	0.16	-1.26	3.02	9.09	4.80	-5.56	4.78	9.73
Core Private Real Estate Composite	4.91	7.75	8.50	11.92	20.06	7.12	14.60	13.01	22.87	-27.15
NCREIF Property Index	6.72	6.96	7.97	13.33	11.82	10.98	10.54	14.26	13.11	-16.85



5th Percentile	1.66	15.23	6.79	9.33	7.62	9.10	9.32
1st Quartile	1.13	13.94	5.18	8.44	6.95	8.31	8.67
Median	0.84	12.87	4.29	8.00	6.44	7.74	8.17
3rd Quartile	0.44	11.31	3.37	7.20	5.85	6.90	7.49
95th Percentile	-0.09	9.33	1.71	5.39	4.51	4.93	5.93

Parentheses contain percentile rankings.  
Calculation based on quarterly periodicity.